KOOTENAI RIVER WHITE STURGEON - M&E 9401200

SHORT DESCRIPTION:
Increase the monitoring and evaluation of sturgeon migration and spawning activities in the Kootenai River in relation to flow augmentation from Libby Dam. Evaluate the effect of the increased flows on reproduction, egg, and larval survival.

SPONSOR/CONTRACTOR: IDFG/KTOI
Idaho Department of Fish and Game / Kootenai Tribe of Idaho
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SUB-CONTRACTORS:
None

GOALS

GENERAL:
Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Provides needed habitat protection, Adaptive management (research or M&E), Program coordination or planning

RESIDENT FISH:
Habitat, Production, Research, M&E

NPPC PROGRAM MEASURE:
10.6C.1;10.4B;.1;.2;.3;.4;and .5

RELATION TO MEASURE:
The Monitor and Evaluation (M&E) is comprised of a single study with several companion studies and inter agency cooperation with additional related studies. The M&E was provided to target white sturgeon (ESA listed), in the Kootenai River . Tasks outlined in the M&E Work Plan include assisting the Kootenai Tribe of Idaho with brood fish collections, Monitoring and Evaluation of sturgeon spawning and rearing, and evaluation of hatchery stockings of sturgeon from the tribal hatchery. Monitoring and Evaluation primarily involves experimental flows provided by the US Army Corps of Engineers for sturgeon spawning and rearing. M&E is a cooperative study by IDFG, Kootenai Tribe of Idaho, and the Montana Department of Fish ,Wildlife and Parks. Also there is the companion study the Kootenai River Fisheries Investigation designed to det

BIOLOGICAL OPINION ID:
USFWS - BO Incidental Take, IDHOFG-2, PRT-702631

TARGET STOCK	LIFE STAGE	MGMT CODE (see below)
White sturgeon		I,S,W

BACKGROUND

STREAM AREA AFFECTED

Stream name:
Kootenai River

Stream miles affected:
171

Hydro project mitigated:
Libby Dam, Libby , Montana

Project is an office site only

LAND AREA INFORMATION

Subbasin:
Kootenai River Basin

Land ownership:
Public

Acres affected:
8,769,730

Habitat types:
Kootenai River drainage, large mainstem river, side channels, backwater sloughs

HISTORY:
This project is an enhancement of projects 8806400 and 8806500. Approximately, 47,500 dollars is allocated to each agency for additional monitoring during increased discharge for white sturgeon.

BIOLOGICAL RESULTS ACHIEVED:
See projects 8806400 and 8806500 for results.

PROJECT REPORTS AND PAPERS:
"Natural Spawning of White Sturgeon (Acipenser transmontanus) in the Kootenai River, Idaho, 1994 and 1995." Preliminary Report of Research. KTOI, IDFG and MDFWP. "Natural spawning of white sturgeon (Acipenser transmontanus) in the Kootenai River, Idaho, 1996." Preliminary Report of Research. Projects 8806400 and 8806500 both submit monthly and annual reports that include final results of the monitoring and evaluation program.

ADAPTIVE MANAGEMENT IMPLICATIONS:
Minimum thresholds for flow augmentation will be determined to provide spawning and recruitment of Kootenai River white sturgeon. Once sufficient recruitment has been demonstrated and measures are repeatable the population may be taken off the Endangered Species list. Determining minimum flow will reduce the impacts on other activities in the Kootenai River Basin. These activities include: agricultural, recreational fishery in Lake Koocanusa, flood control, power generation, IJC and Columbia River treaty.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:
Determine the minimum flow that will provide spawning and recruitment of Kootenai River white sturgeon.

CRITICAL UNCERTAINTIES:
The Post-dam Kootenai River's ability to allow natural life cycle completion for white sturgeon.

BIOLOGICAL NEED:
Please see project 8806500 and 8806400 for description of underlying need for the project.

HYPOTHESIS TO BE TESTED:
Augmented flow from Libby Dam will result in white sturgeon spawning and recruitment.

ALTERNATIVE APPROACHES:
Recover white sturgeon population by hatchery produced fish. This approach was rejected because it would select for hatchery fitness not natural in river fitness, reduce or eliminate genetic integrity, cause founder effect, massive inbreeding, a short term not long term solution, does not address the problem of habitat, does not recover the ecosystem and thus does nothing for other species of interest.

JUSTIFICATION FOR PLANNING:
N/A

METHODS:
Please see project 8806500 and 8806400 for description of methods.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase	**Start** January 1, 1997	**End** Dec. 31, 1997	**Subcontractor**

Task Please see project 8806500 and 8806400 for scheduled activities.

Implementation Phase **Start** March 1, 1997 **End** Dec. 31, 1997 **Subcontractor**

Task (1) Attach transmitters to prospective white sturgeon spawners and track w/telemetry - Spring. (2) Sample sturgeon eggs and larvae, measure habitat parameters - Spring - Summer. (3) Stage eggs and back calculate spawn date (episode) of eggs - Summer (4) Sample age-0 and juvenile sturgeon - Summer to Autumn. (5) Laboratory work, age analysis, and habitat analysis, report writing and data analysis - Autumn - Winter.

PROJECT COMPLETION DATE:
December 31, 2017

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:
None with implementation of the monitoring and evaluation component. Only risk that exists is not monitoring and evaluating the effectiveness of flow augmentation for Kootenai River white sturgeon.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:
Determination of post-dam Kootenai River's ability to allow natural life cycle completion of white sturgeon. Operate Libby Dam consistent with previous determinations.

Present utilization and convservation potential of target population or area:
At present the Kootenai River white sturgeon is an Endangered Species and as such there is no fishing permitted. The potential is for augmented flows to provide suitable spawning and rearing habitat and recover and delist this population.

Assumed historic status of utilization and conservation potential:
There are no document pre dam angling records for the Kootenai River but white sturgeon provided an important tribal and angler fishery. The tribal importance was not necessarily for consumption but of ceremonial value.

Long term expected utilization and conservation potential for target population or habitat:
Recovery of the Kootenai River white sturgeon will be important to Delisting this species. If the population is restored a catch and release fishery may be opened and a recreational resource stored to the Region.

Contribution toward long-term goal:
White sturgeon natural spawning, recruitment, and recovery of the population.

Indirect biological or environmental changes:
New crop rotational system that is compatible to higher soil moisture during spring. Land acquisition and land use changes from agricultural to upland or wetland wildlife management.

Physical products:
Tag 50 adult white sturgeon/year and attach sonic/radio tags to ten adults.

Environmental attributes affected by the project:
Land owners of some agricultural ground have reported increased pumping costs of wet crop land due to more normal spring time flows for white sturgeon. Higher spring time flows have reduced water temperatures in the Kootenai River during spring by about 2o C. The higher spring time flows also provide more zooplankton to the river but reduces biomes in the reservoir. In turn there may also be higher entertainment of kokanee at Libby Dam from Lake Koocanusa.

Changes assumed or expected for affected environmental attributes:
The above mentioned factors would become common spring time events.

Measure of attribute changes:
N/A

Assessment of effects on project outcomes of critical uncertainty:
The Kootenai River White Sturgeon Recovery Team has actively sought the input from the Boundary County Extension Office in regard to agricultural issues and impacts. In addition the USACE has been active with the agricultural community in response to their direct concerns.

Information products:
There are three Annual Reports completed each year as well as five to ten news releases, two to three radio programs describing these studies. Two publications for peer reviewed journals are in progress and one is in print. Popular articles for conservation magazines are prepared annually. About eight oral presentations to lay and scientific organizations are also delivered each year.

Coordination outcomes:
See projects 8806400 and 8806500 for products and milestones.

MONITORING APPROACH
Please see project 8806500 and 8806400 for description of methods.

Provisions to monitor population status or habitat quality:
Collecting permits and Section 10 Permits have been procured. A rough draft of the Kootenai River White Sturgeon Recovery Plan has been prepared and a final Recovery Plan will be ready by late summer 1997. This plan outlines not only the recovery needs that are to be followed for white sturgeon but also measures for the recovery of burbot, rainbow trout, kokanee, and whitefish. Also this has been an ongoing project and all studies have been in place for a minimum of four years. Thus, all necessary planning and needs are ready for the future. This includes incorporation of and meeting the needs of the Regional Fish Management Plan, the Statewide Fish Management Plan and Research Prioritization list.

Data analysis and evaluation:
Data will be compiled by project technicians and the principle investigator. Data analysis, data evaluation, and report preparation will be completed by the principle investigator using state of the art methodology. Findings will be reviewed by in house panel of experts and the research manager . Data and findings will be presented at a Project Review Meeting and scrutinized. Technical advise and input from outside will also be sought as it is necessary.

Information feed back to management decisions:
The information will be available in Annual and Completion Reports. In house meetings (Staff Meetings, Research Meetings, Project Review Meetings) will take place to implement findings as needed and be incorporated into management plans either Statewide or Regional or both. In addition findings will be shared through a number of media with various state, provincial, tribal, and federal agencies that have a vested interest in our findings and management recommendations.

Critical uncertainties affecting project's outcomes:
(a) Negotiations with conflicting interests through the Kootenai River White Sturgeon Recover Team, Kootenai River Ecosystem Steering Committee or by consultation with in house or outside experts to predict outcome from various options or adaptive management decisions. (b) None at this time.

EVALUATION
Management plans leading to recruitment of white sturgeon and recovery of the population.

Incorporating new information regarding uncertainties:

As new information or technologies become available they will be incorporated into the Annual Work Plans , Project Documents, or Annual Reports after going through the research review process or through the Kootenai River White Sturgeon Recovery Team.

Increasing public awareness of F&W activities:
The project has already increased the public's awareness of the regions efforts through the news media via news releases, radio spots, popular articles, and oral presentations to clubs, civic groups, sportsmans groups etc.

RELATIONSHIPS

RELATED BPA PROJECT	RELATIONSHIP
9404900 Kootenai River Ecosystem Improvements Study	Cooperative assistance for task completion, equipment loans, technical advise, and assistance
8806500 Kootenai River Fisheries Investigations	Cooperative assistance for task completion, equipment loans, technical advise, and assistance
8806400 Kootenai River White Sturgeon Study and Aquaculture	Cooperative assistance for task completion, equipment loans, technical advise, and assistance
8346700 All worked is being performed in the Kootenai River system. Activities are coordinated through the Kootenai River Ecosystem Steering Committee and the Kootenai River White Sturgeon Recovery Team.	Cooperative assistance for task completion equipment loans, technical advise, and assistance

RELATED NON-BPA PROJECT	RELATIONSHIP
Bull trout surveys in the Kootenai Drainage, USFWS	Technical advise and data sharing

OPPORTUNITIES FOR COOPERATION:
Permits must be obtained under Section 7 and Section 10 consultation with USFWS. Kootenai Tribe of Idaho, Montana Dept. of Fish, Wildlife and Parks, Idaho Dept. of Fish and Game and British Columbia Ministry of Environment. Participation in Kootenai River Basin Steering Committee and the federal Kootenai River White Sturgeon Recovery Team will assist with monitoring and evaluation program.

COSTS AND FTE

1997 Planned: $95,600

FUTURE FUNDING NEEDS:

FY	$ NEED	% PLAN	% IMPLEMENT	% O AND M
1998	$100,000	10%	60%	30%
1999	$100,900	10%	60%	30%
2000	$11,000	10%	60%	30%
2001	$11,990	10%	60%	30%
2002	$13,070	10%	60%	30%

PAST OBLIGATIONS (incl. 1997 if done):

OTHER NON-FINANCIAL SUPPORTERS:
British Columbia Ministry of Natural Resources, Kootenai Tribe of Idaho, Montana Department of Fish, Wildlife and Parks; U S Fish and Wildlife Service, National Biological Service, U S Army Corps of Engineers, B C Hydro

LONGER TERM COSTS:
2003 $14,246 annually plus inflation of 5- 10% annually. The Kootenai River White Sturgeon cannot be delisted for one complete generation or for about 20 years from the year of adoption of the recovery plan. Flow measures must be repeatable. When repeatable flow measures for recruitment are determined implementation will be operation and maintenance.

1997 OVERHEAD PERCENT: 19% Operating

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:
A portion, personnel overhead is about 34%.

CONTRACTOR FTE: Four temporary employees of two to three month duration.

SUBCONTRACTOR FTE: None